



**URGENT**  
*Urban Reasoning and Geospatial Exploitation Technology*

## Frequently Asked Questions (FAQ)

BAA 07-13

22 February 2007



## FREQUENTLY ASKED QUESTIONS

- Q1. Are we required to propose recognize all 150 urban objects of interest, or can we specific a subset we will address and excel at?**
- A1. DARPA is interested in recognizing all objects in the URGENT 150 during Phase 1 and request proposals addressing the recognition of all 150 objects. Offerors are encouraged to team with others if they believe they can address only a portion of the required objects.
- Q2. Are teams that enable a complete solution encouraged?**
- A2. Teams that enable complete coverage of the URGENT 150 are encouraged. Teams that propose complete coverage of URGENT Phase 1 and II technical objectives will be evaluated in accordance with URGENT Phase 1 criteria only.
- Q3. What is the duration and estimates contract value?**
- A3. The duration and contract value will depend on the approaches proposed and their associated levels of risk and innovations. Offerors are requested to submit their anticipated contract durations and cost so that DARPA may evaluate each independently.
- Q4. What is the overall DARPA budget for URGENT Phase 1? Are there any upper limits funding for particular proposals?**
- A4. The budget for URGENT has not been fixed at this time. The final budget will depend on the proposals selected for funding. No single-project funding limits have been set at this time.
- Q5. How many awards are anticipated?**
- A5. It is anticipated that multiple awards will be made for URGENT Phase 1. The precise number will depend on the number of proposals received and their respective merits.
- Q6. Are proposals required to include Phase 2 and 3 tasks?**
- A6. No.
- Q7. Will successful teams in Phase 1 automatically proceed to Phase 2? Will Phase 2 be open to organizations who do not participate in Phase 1?**
- A7. The technology needed for Phase 1 is anticipated to be different from the technology needed for Phase 2. It is anticipated that Phase 2 will be a separate procurement that will enable other organization to participate.
- Q8. Are there any university set asides?**
- A8. Universities are encouraged to submit proposals as primes or subcontractors, but there will be no university set aside under the URGENT program.



Q9. **Were there workshops or seedlings conducted specifically in preparation for the URGENT program?**

A9. No.

Q10. **Is object recognition development in Phase 1 meant to be improved in Phase 2?**

A10. Object recognition Improvements in Phase 2 are expected in the ability to recognize more objects with comparable accuracy and speed.

Q11. **Although automated reasoning is the focus of URGENT Phase 2, can automated reasoning also be employed in Phase 1?**

A11. Yes, technical approaches involving automated reasoning are appropriate for URGENT Phase 1. However, this should be employed solely for the purpose of object recognition in Phase 1.

Q12. **Will the duration of proposed effort be a significant deciding factor in the award process?**

A12. Yes. Schedule is among the evaluation criteria. Proposals that offer aggressive schedules for successful accomplishment of the Phase 1 experiment are encouraged.

Q13. **May industry partner with government labs and research centers? Or work with academia that works with government labs?**

A13. There are not restrictions of this kind in the URGENT BAA.

Q14. **While academic involvement is encouraged, is there any ITAR restrictions that might affect the sharing of information with academic partners?**

A14. The only restriction will be that some data provided will be FOUO.

Q15. **Our approach contains proprietary algorithms and we'll require the government to either license the technology or pay annual royalties. Is this a problem?**

A15. DARPA desires innovative technology approaches to urban object recognition, but requires the ability integrate these approaches for DoD applications. Proprietary algorithms that restrict the government from receiving source code, require the government to license technology, or that in any way impact the integration of URGENT algorithms are not in the best interest of the government and should be avoided. Approaches with proprietary restrictions should clearly identify the restrictions in the proposal.

Q16. **Does URGENT require a full scale user interface development? Are there specific output formats the government seeks for describing recognized objects?**

A16. Graphical user interfaces are not a major component of URGENT, but developers are required to be able to display their identified objects in 3D to support Test Group B geospatial analyst/URGENT system interaction. To



facilitate this, offerors' output data should be compliant with the geospatial file format standards described at <http://www.opengeospatial.org/>.

**Q17. Will Phase 1 “automate” the object recognition so that there is no need for a human arbiter to acknowledge each identified object?**

A17. Evaluation will be a comparison between performance and human performance using URGENT technology.

**Q18. Is the URGENT system expected to automatically create a mission plan (e.g., insurgent capture) or to facilitate a human in formulation of a mission plan?**

A18. It is anticipated that URGENT will enable the latter capability rather than the former.

**Q19. Will URGENT identify and read street signs?**

A19. No. There is a street sign category in the URGENT 150. It is not anticipated that the system will read the text of street sign.

**Q20. Are the posted data files examples of the only data type/form we will receive during the program or will other sensors be used?**

A20. Data has been posted to provide examples of existing LIDAR, EO, and fused LIDAR/EO data representative of the URGENT problem. Additional collections of point cloud and surface LIDAR data will occur during the program using additional sensors.

**Q21. Will the EO/LIDAR data be collected at the same time?**

A21. Yes.

**Q22. Will there be EO to accompany the Airborne LIDAR?**

A22. Yes.

**Q23. What will the resolution be for the EO data?**

A23. This will depend on the sensor used for the collection. It is fair to say that the EO resolution will be at least as good as the LIDAR resolution described in the PIP.

**Q24. Will multiple data collections occur so that multiple instances of objects are available?**

A24. Yes, we anticipate several data collections.

**Q25. Can you tell us more specifically in what format data will be provided to performers? The PIP says that 3D LIDAR data will be provided as geospatially registered point clouds. That is sufficiently clear, but how will the color imagery be provided? As color annotations to the LIDAR data, such as X-Y-Z-I-R-G-B point clouds?**

A25. The data provided will include the raw LIDAR, raw EO, fused LIDAR/EO, and registered airborne/ground data. At a minimum, the data will be provided as X-Y-



Z-R-G-B point clouds but additional data standard formats may also be provided.

**Q26. How can we find out information on the collateral EO & LIDAR imagery?**

A26. Data will be available for download on the website.

**Q27. What is the frame rate of the EO data?**

A27. This will depend on the sensor used for the collection.

**Q28. Which specific sensors will be used?**

A28. DARPA will use a variety of different LIDAR and EO sensors.

**Q29. Will hyperspectral EO data be provided?**

A29. Use of hyperspectral data is not anticipated for URGENT Phase 1.

**Q30. Does “registered” imagery mean position and attitude data will be provided for image exposure stations?**

A30. No.

**Q31. Will the “raw” unregistered LIDAR and EO imagery be provided?**

A31. Yes.

**Q32. Will it be possible to have (a) the original data (esp. LIDAR) in the sensors' coordinate systems (e.g. with the center of projection at the origin), and (b) the point-by-point mapping of these data from the sensor coordinate system to the coordinate system in which the registered data are presented to us?**

A32. Both the original data in the sensors' coordinate systems and the point-by-point mapping of these data from the sensor coordinate system to the registered data coordinate system will be provided.

**Q33. Will the EO data contain metadata indicating the position of the sensor when the data was collected?**

A33. Camera pose, sensor GPS position, and time will be provided as metadata.

**Q34. Will error estimates for sensor position and sensor accuracy be included?**

A34. No.

**Q35. Will EO be collected as image or video?**

A35. Both, depending on the sensor selected.

**Q36. Does registered data come from a single LIDAR view or several LIDAR views registered?**

A36. The data will come from several registered views.

**Q37. Will the ground-based LIDAR have intensity and range information or just range information?**

A37. Both intensity and range data will be provided.



**Q38. Will the EO data be black and white or color?**

A38. Color.

**Q39. Should we account for decoys?**

A39. No.

**Q40. Will provided scenes be only for clean-air scenes without hidden objects? Any desire to see beneath ground-cover?**

A40. Objects will be located in the open collected on clear days.

**Q41. Is there a desire or interest to incorporate other data sources (e.g., radar) if they provide additional value?**

A41. No.

**Q42. Is there any interest in data that varies over time?**

A42. Not for URGENT Phase 1.

**Q43. Will the Government provide any geospatial knowledge bases or geographic information services for this program?**

A43. No.

**Q44. Will a target characteristics library be provided for the 150 desired targets?**

A44. No.

**Q45. Will a set of models be provided for the URGENT 150?**

A45. No.

**Q46. Is this program classified in Phase 1?**

A46. No. In addition, data used on the program will be FOUO but unclassified during Phase 1.

**Q47. What is the current analyst capability? Has it been measured?**

A47. Specific measurements of geospatial analyst capability are unknown at this time. The purpose of the benchmark effort is to establish this. It is anticipated that the baseline effort will conclude by midpoint of Phase 1.

**Q48. NGA has documented extraction times for FFD and DTOP. Is this the metric that URGENT should surpass by two orders of magnitude?**

A48. No. The baseline will be established during the program.

**Q49. Will performers have access to analysts during the program?**

A49. An effort will be made to provide access to geospatial analysts during the program. However, these interactions—if they occur—will be scheduled events; offerors should not assume they will have consistent access to analysts.

**Q50. In Phase 1 Experiment, are metrics  $P_D/P_{ID}$ /FAR based on the region outlining an object or the centroid of an object?**



A50. It is anticipated that these metrics will relate to object outlines that cover at least 50% region of an object.

Q51. **Will successfully identifying an object using only a subset of the data provided (e.g., airborne EO/LIDAR but not terrestrial EO/LIDAR, EO but not LIDAR) satisfy the URGENT Phase 1 go-no go criteria?**

A51. Yes.

Q52. **What if an approach performs well on the 150 objects of interest is brittle with respect to new/different objects?**

A52. Although the URGENT Phase 1 focus is only on the 150 objects of interest, proposers should be mindful that successful transition of the technology will depend to some extent on its ability to adapt rapidly to changing mission requirements and thereby new objects of interest.

Q53. **During the evaluation phase, for the go/no-go decision, will we be allowed to run our software on computer hardware we supply? Or do we have to run on DARPA/NGA supplied systems?**

A53. Proposers should assume their solutions will be able to run on the hardware platform of their choice. However, the specific details for the URGENT Phase 1 evaluation are still under development, so hardware and/or operating system restrictions may be imposed.

Q54. **Are novel hardware architectures possible or is a “standard” personal computer platform assumed?**

A54. Proposed object recognition technology must run on commercially available hardware.

Q55. **Where is the URGENT testbed? What clearances will be provided?**

A55. There is a DARPA/NGA testbed being developed, although its specific location has not been established. We intend for the testbed to be unclassified.

Q56. **May we elect to do our own registration of data rather than rely on pre-registered data?**

A56. Proposers may offer to perform their own registration. However, the processing time for this registration will count against the productivity metric.

Q57. **When measuring the 100x speed-up, are we considering only the time of the analyst or are we considering the total time from availability of the raw data to the final output of the labeled URGENT-150 objects?**

A57. The baseline analyst time used to measure URGENT speed-up is the time from when the analyst is presented sensor data until the analyst completes his or her analysis.

Q58. **In reviewing BAA 07-13, URGENT, there is a reference to BAA 07-15, “Elusive Surface Target Engagement Technology.” Where might this**



**solicitation be found?**

A58. This is a reference to the DARPA/IXO office-wide BAA, the successor to BAA 05-45. BAA 07-15 has not yet been released, but is expected soon.

**Q59. For ground and airborne data provided to us, will metadata be available that describes interior and exterior orientation at the time of collect? Will we have some knowledge of the noise statistics of the ladar sensor?**

A59. Meta data provided will include sensor orientations, noise statistics, GPS time, pulse count, pulse intensity, calibrated pulse range, and the data outlined in A32 and A33. Airborne collected data sets will also include aircraft roll, pitch, heading and position. The list of ground and airborne collection platforms DARPA will use during URGENT (and the meta data available from each) will evolve during the course of the program. Offerors should identify the meta data their approach will require and how it will be used (preferable in a table) as indicated in E.2 Section II Detailed Proposal Information. This will provide the government with the information to define the meta data requirements to be imposed on the data collection platforms.

**Q60. Relating back to Question 57, is the analysts' productivity enhancement with URGENT protocols (Group B) measured as a function of exploitation time only or the combined URGENT processing and exploitation time? If the latter, then can we assume that the unaided analysts (Group A) will be evaluating multiple sets measured (but registered) of overlapping imagery of the same area?**

A60. The analysts' productivity enhancement with URGENT will be measured as a function of the combined URGENT processing and exploitation time. NGA will define the evaluation process and procedures for selecting data used by both image analysts and URGENT analysts by the end of the first quarter of the URGENT program.

**Q61. Will LIDAR/EO data collected for the URGENT program be made available to foreign nationals?**

A61. URGENT LIDAR/EO data will be marked "For Official Use Only" (FOUO). DARPA anticipates that foreign nationals working specifically on the URGENT program will have access to this data. Further distribution of this data, however, will be restricted.

**Q62. Can you please let me know if a Canadian company is eligible to bid on BAA 07-13?**

A62. Yes, Canadian companies are eligible to submit proposals under BAA 07-13.